### PATENT COOPERATION TREATY

10758462

# **PCT**

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference MP-YU8305-P	FOR FURTHER ACTION	See item 4 below	
International application No. PCT/JP2005/006735	International filing date (day/month/year) 30 March 2005 (30.03.2005)	Priority date (day/month/year) 31 March 2004 (31.03.2004)	
International Patent Classification (8th See relevant information in Form P	edition unless older edition indicated) CT/ISA/237		
Applicant GS YUASA CORPORATION			

	•		
1.	This international preliminary re International Searching Authori		Chapter I) is issued by the International Bureau on behalf of the a).
2.	This REPORT consists of a total	d of 5 sheets, including	this cover sheet.
	In the attached sheets, any refer to the international preliminary	<del>-</del>	ion of the International Scarching Authority should be read as a reference (Chapter I) instead.
3.	This report contains indications	relating to the followin	g items:
	Box No. I	Basis of the report	·
	Box No. II	Priority	
	Box No. III	Non-establishment of applicability	of opinion with regard to novelty, inventive step and industrial
	Box No. IV	Lack of unity of inv	rention
•	Box No. V		under Article 35(2) with regard to novelty, inventive step or industrial ons and explanations supporting such statement
	Box No. VI	Certain documents	cited
	Box No. VII	Certain defects in th	ne international application
	Box No. VIII	Certain observation	s on the international application
4.			to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but est under Article 23(2), before the expiration of 30 months from the priority
			Date of issuance of this report 04 October 2006 (04.10.2006)
	The International Bure 34, chemin des Co 1211 Geneva 20, St	ombettes	Authorized officer Yoshiko Kuwahara
Facsi	mile No. +41 22 338 82 70		e-mail: pt07@wipo.int

Form PCT/IB/373 (January 2004)

## 特許協力条約

#### 発信人 日本国特許庁 (国際調査機関)

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REG'D 1 4 JUL 2005 Wipo PCT

PCT 国際調査機関の見解書 (法施行規則第40条の2) [PCT規則43の2.1]

発送日

(日.月.年)

12. 7. 2005

出願人又は代理人

の審類記号 MP-YU8305-P 今後の手続きについては、下配2を参照すること。

国際出願番号

国際出願日

PCT/JP2005/006735 (日.月.年) 30.03.2005

優先日

(日.月.年) 31.03.2004

国際特許分類 (IPC) Int.Cl. C01B3/00, 3/32, C25B1/02, 5/00, H01M8/00, 8/06, 8/10

出願人(氏名又は名称)

株式会社 ユアサ コーポレーション・

1. この見解音は次の内容を含む。

第 I 欄 見解の基礎

第Ⅱ欄 優先権

第Ⅲ欄 新規性、進歩性又は産業上の利用可能性についての見解の不作成

第IV欄 発明の単一性の欠如

第V棡 PCT規則 43 の 2.1(a)(i)に規定する新規性、進歩性又は産業上の利用可能性についての見解、 それを裏付けるための文献及び説明

第VI欄 ある種の引用文献

第VI枫 国際出願の不備

▼ 第四個 国際出願に対する意見

#### 2. 今後の手続き :

国際予備審査の請求がされた場合は、出願人がこの国際調査機関とは異なる国際予備審査機関を選択し、かつ、その国 際予備審査機関がPCT規 66.1 の 2(b)の規定に基づいて国際調査機関の見解書を国際予備審査機関の見解書とみなさ ない旨を国際事務局に通知していた場合を除いて、この見解書は国際予備審査機関の最初の見解書とみなされる。

この見解書が上記のように国際予備審査機関の見解費とみなされる場合、様式PCT/ISA/220を送付した日か ら3月又は優先日から22月のうちいずれか遅く満了する期限が経過するまでに、出願人は国際予備審査機関に、適当 な場合は補正書とともに、答弁書を提出することができる。

さらなる選択肢は、様式PCT/1SA/220を参照すること。

3. さらなる詳細は、様式PCT/ISA/220の備考を参照すること。

見解書を作成した日

28.06.2005

名称及びあて先

日本国特許庁(ISA/JP) 郵便番号100-8915 東京都千代田区霞が関三丁目4番3号 特許庁審査官(権限のある職員)

9439 4 G

安齋 美佐子

電話番号 03-3581-1101 内線 3416

様式PCT/ISA/237 (表紙) (2004年1月)

	4 (14 to "Exer bake		
第 I 梱 見解の基礎			
1. この見解書は、下記	記に示す	場合を除くほか、国際出願の言語を基	<b>礎として作成された。</b>
「この見解書は、 それは国際調査		語による翻訳文を基礎と に提出された P C T 規則12.3及び23.1(	
2. この国際出願で開え 以下に基づき見解れ		つ請求の範囲に係る発明に不可欠なヌ した。	クレオチド又はアミノ酸配列に関して、
a. タイプ	Γ.	配列表	
	Γ	配列表に関連するテーブル	
b. フォーマット	Г	<b>咨面</b>	
		コンピュータ読み取り可能な形式	•
c. 提出時期	1	出願時の国際出願に含まれる	•
		この国際出願と共にコンピュータ読み	取り可能な形式により提出された
	Γ.	出願後に、調査のために、この国際調	査機関に提出された
3. 「 さらに、配列表 た配列が出願明 あった。	ででは配 をに提出	列表に関連するテーブルを提出した場 した配列と同一である旨、又は、出願®	合に、出願後に提出した配列若しくは追加して提出1 時の開示を超える事項を含まない旨の陳述書の提出が
4. 補足意見:	•		• •

#### 国際調査機関の見解書

国際出願番号 PCT/JP2005/006735

第 	V 棚 新規性、進歩性又は産業上 それを <b>返付る文献及び説</b> 明	の利用可能性についてのPC 	T規則 43 の 2.1(a) (i) に定める見解、	
1.	見解			
	新規性(N)	請求の範囲 請求の範囲	1-47	· 有 無
	進歩性(IS)	請求の範囲 請求の範囲	1-47	
	産業上の利用可能性(IA)	請求の範囲	1-47	有

#### 2. 文献及び説明

文献1:JP 11-229167 A (ペルメレック電極株式会社) 1999.08.24

文献 2: JP 3328993 B2 (住友電気工業株式会社) 2002.07.19 文献 3: JP 3360349 B2 (住友電気工業株式会社) 2002.10.18 文献 4: JP 2001-297779 A (松下電器産業株式会社) 2001.10.26

文献 5: JP 6-73583 A (三井東圧化学株式会社) 1994.03.15

文献 6: US 2003/0226763 A1 (CALIFORNIA INSTITUTE OF TECHNOLOGY) 2003.12.11

請求の範囲1-47記載の発明は、国際調査報告に引用された上記文献1-6に対して進歩性を有する。文献1-6には、「水素製造装置が、有機物を含む燃料を分解して水素を含むガスを製造するものであり、隔膜、前記隔膜の一方の面に設けた燃料極、前記燃料極に有機物と水を含む燃料を供給する手段、前記隔膜の他方の面に設けた酸化極、前記酸化極に酸化剤を供給する手段、燃料極側から水素を含むガスを発生させて取り出す手段を備えてなる」点が記載されておらず、しかもその点は文献1-6から当業者といえども自明なものではない。

第四個 国際出願に対する意見

節求の範囲、明細書及び図面の明瞭性又は請求の範囲の明細書による十分な裏付についての意見を次に示す。

請求の範囲6の冒頭には、「前記水素製造セル」と記載されているが、引用する請求の範囲1には、「水素製造セル」という記載がないため、「前記」という記載は不適当である。また、「前記水素製造セル」が請求の範囲1のどの構成を指すのか不明瞭である。

# **PCT**

#### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

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International application No. PCT/JP2005/006735	International filing date (day/month/year) 30 March 2005 (30.03.2005)	Priority date (day/month/year) 31 March 2004 (31.03.2004)
International Patent Classification (8th See relevant information in Form F	n edition unless older edition indicated) PCT/ISA/237	
Applicant GS YUASA CORPORATION		

1.	This international preliminary r International Searching Author		hapter I) is issued by the International Bureau on behalf of the ).
2.	This REPORT consists of a total	al of 5 sheets, including t	his cover sheet.
	In the attached sheets, any refer to the international preliminary		on of the International Searching Authority should be read as a reference Chapter I) instead.
3.	This report contains indications	relating to the following	g items:
	Box No. I	Basis of the report	
	Box No. II	Priority	
•	Box No. ΠΙ	Non-establishment o applicability	f opinion with regard to novelty, inventive step and industrial
	Box No. IV	Lack of unity of inve	ention
	Box No. V		under Article 35(2) with regard to novelty, inventive step or industrial as and explanations supporting such statement
	Box No. VI	Certain documents c	ited
	Box No. VII	Certain defects in the	e international application
	Box No. VIII	Certain observations	on the international application
4.			o designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but st under Article 23(2), before the expiration of 30 months from the priority
			Date of issuance of this report
			19 October 2006 (19.10.2006)
	The International Bun 34, chemin des Co 1211 Geneva 20, S	lombettes	Authorized officer  Yoshiko Kuwahara
Facsin	nile No. +41 22 338 82 70	WIDELIAIN	e-mail: pt07@wipo.int

#### PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY To: WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1) Date of mailing (day/month/year) Applicant's or agent's file reference FOR FURTHER ACTION MP-YU8305-P See paragraph 2 below International application No. International filing date (day/month/year) Priority date (day/month/year) PCT/JP2005/006735 30.03.2005 31.03.2004 International Patent Classification (IPC) or both national classification and IPC Applicant GS YUASA CORPORATION This opinion contains indications relating to the following items: Basis of the opinion Box No. I Box No. II Priority Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. IV Lack of unity of invention Reasoned statement under Rule 43bis.1(a)(i).with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement Box No. VI Certain documents cited Box No. VII Certain defects in the international application Box No. VIII Certain observations on the international application **FURTHER ACTION** 2. If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCI/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. 3. For further details, see notes to Form PCT/ISA/220. Name and mailing address of the ISA/JP Authorized officer

Telephone No.

Facsimile No.

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/006735

Box	No. I Basis of this opinion
1.	With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
	This opinion has been established on the basis of a translation from the original language into the following language
	, which is the language of a translation furnished for the purposes of international search (under
	Rule 12.3 and 23.1(b)).
2.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
	a. type of material
	a sequence listing
	table(s) related to the sequence listing
	b. format of material
	in written format
	in computer readable form
<b>.</b>	
	c. time of filing/furnishing
	contained in the international application as filed.
	filed together with the international application in computer readable form.
	furnished subsequently to this Authority for the purposes of search.
3.	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Additional comments:
	•
	•

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2005/006735

Claims Cl	1. Statement  Novelty (N)  Claims  Inventive step (IS)  Claims  Claims  L-47  Claims  Industrial applicability (IA)  Claims  L-47  Claims  Claims  L-47  Claims  Industrial applicability (IA)  Claims  L-47  Claims  Claims  L-47  Claims  No  Claims  L-47  Yff  Claims  Document 1: JP 11-229167 A (Pertumerekku Denkyoku K.K.), 24 August 1999  Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002  Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002  Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 2001  Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994  Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-	Box			•	
1. Statement  Novelty (N)  Claims  Claims  1-47  Claims  1-47  Claims  Inventive step (IS)  Claims  Claims  1-47  Claims  Industrial applicability (IA)  Claims  Claims  1-47  Claims  1-47  Claims  No  Claims  1-47  Claims  1-47  Claims  No  Claims  1-47  Claims  1-47  Claims  No  Claims  1-47  Claims  No  Claims  1-47  Claims  No  Claims  1-47  Claims  No  Claims  No  Claims  1-47  Claims  No  No  Claims  No  Claims  1-47  Claims  No  No  No  Claims  No  No  No  Claims  No  No  No  No  No  No  Claims  No  No  No  No  No  Claims  No  No  No  No  No  No  No  No  No  N	1. Statement  Novelty (N)  Claims  Inventive step (IS)  Claims  Claims  Local 1-47  Claims  Local 1-47  Claims  Industrial applicability (IA)  Claims  Claims  Local 1-47  Claims  Claims  Local 1-47  Claims  Claims  Local 1-47  Claims  No  Claims  Claims  Local 1-47  Claims  Local 1-47  Claims  No  Claims  Local 1-47  YE  Claims  Local 1-47  YE  Claims  Local 1-47  YE  Claims  Local 1-47  YE  Claims  No  Local 1-47  YE  Claims  No  Claims  Local 1-47  YE  Claims  No  No  Claims  Local 1-47  YE  Claims  No  Local 1-47  YE  Claims  No  Local 1-47  YE  Claims  No  Local 1-47  YE  No  No  No  No  Local 1-47  YE  No  No  No  No	_				entive step or industrial applicability;
Claims  Claims  Claims  Claims  Claims  Claims  Lourner (Is)	Claims  Claims  Claims  Claims  Claims  Lindustrial applicability (IA)  Claims  Claims  Locument 1: JP 11-229167 A (Perumerekku Denkyoku K.K.), 24 August 1999  Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002  Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002  Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 2001  Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994  Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-containing gas from a fuel pole side; nor would it be obvious to a party skilled in the art	l.				
Claims  Claims  Claims  Claims  Claims  Claims  Lourner (Is)	Claims  Claims  Claims  Claims  Claims  Lindustrial applicability (IA)  Claims  Claims  Locument 1: JP 11-229167 A (Perumerekku Denkyoku K.K.), 24 August 1999  Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002  Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002  Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 2001  Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994  Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-containing gas from a fuel pole side; nor would it be obvious to a party skilled in the art		Novelty (N)		1_47	
Industrial applicability (IA)  Claims  Claims  Claims  Claims  Claims  Leaf 7  Claims  Industrial applicability (IA)  Claims  Claims  Claims  Leaf 7  Claims  No  No  Claims  Claims  Leaf 7  Claims  No  No  Claims  Claims  Leaf 7  Claims  No  No  Claims  Leaf 7  Claims  No  No  Claims  No  No  Claims  Leaf 7  Claims  No  No  Claims  No  No  Claims  Leaf 7  No  No  Claims  No  No  Claims  Leaf 7  No  No  Claims  No  No  Claims  No  No  Claims  Leaf 7  No  No  No  Claims  No  No  No  Claims  No  No  No  Claims  No  No  No  Claims  No  No  No  No  No  No  Claims  No  No  No  No  Claims  Leaf 7  No  No  No  Claims  Leaf 7  No  No  No  No  No  Claims  No  No  No  No  No  No  No  No  No  N	Industrial applicability (IA)  Claims  Claims  1-47  Claims  1-47  Claims  1-47  Claims  1-47  Claims  1-47  Claims  1-47  Claims  No  2. Citations and explanations:  Document 1: JP 11-229167 A (Perumerekku Denkyoku K.K.), 24 August 1999  Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002  Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002  Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 2001  Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994  Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-containing gas from a fuel pole side; nor would it be obvious to a party skilled in the art				1-4/	
Claims 1-47 Yr.  Claims 1-47 Yr.  Claims 2. Citations and explanations:  Document 1: JP 11-229167 A (Perumerekku Denkyoku K.K.), 24 August 1999 Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002 Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002 Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 200 Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994 Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-containing gas from a fuel pole side; nor would it be obvious to a party skilled in the art	Claims  Claims  Claims  1-47  NO  2. Citations and explanations:  Document 1: JP 11-229167 A (Perumerekku Denkyoku K.K.), 24 August 1999  Document 2: JP 3328993 B2 (Sumitomo Electric Industries, Ltd.), 19 July 2002  Document 3: JP 3360349 B2 (Sumitomo Electric Industries, Ltd.), 18 October 2002  Document 4: JP 2001-297779 A (Matsushita Electric Industrial Co., Ltd.), 26 October 2001  Document 5: JP 6-73583 A (Mitsui Toatsu Kagaku K.K.), 15 March 1994  Document 6: US 2003/0226763 A1 (California Institute of Technology), 11 December 200  The inventions described in claims 1-47 appear to involve an inventive step over documents 1-6 cited in the ISR. Documents 1-6 have no description of a hydrogen production device for producing a hydrogen-containing gas by decomposing an organic-matter-containing fuel, comprising a diaphragm, a fuel pole provided on one surface of the diaphragm, means for supplying to the fuel pole fuel containing organic-matters and water, an oxidizing pole provided on the other surface of the diaphragm, means for supplying an oxidizer to the oxidizing pole, and means for producing and retrieving a hydrogen-containing gas from a fuel pole side; nor would it be obvious to a party skilled in the art			Claims		·
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			Document 2: JP 3328 Document 3: JP 3360 Document 4: JP 2001 Document 5: JP 6-735 Document 6: US 2003  The inventions documents 1-6 cited is production device for matter-containing fue diaphragm, means for an oxidizing pole provo	993 B2 (349 B2 (349 B2 (4297779) 583 A (Market Secondary) 1 (129776) 1 (12977	Sumitomo Electric Industries, Sumitomo Electric Industries, A (Matsushita Electric Industritsui Toatsu Kagaku K.K.), 153 A1 (California Institute of Total California Institute Institute	Ltd.), 19 July 2002 Ltd.), 18 October 2002 rial Co., Ltd.), 26 October 2005 March 1994 Technology), 11 December 2007 volve an inventive step over cription of a hydrogen by decomposing an organic- provided on one surface of the ring organic-matters and water ragm, means for supplying an retrieving a hydrogen-

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/JP2005/006735

INTERNATIONAL SEARCHING AUTHORITY Certain observations on the international application Box No. VIII The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made: Claim 6 (exordium) describes said hydrogen production cell; however, claim 1 has no description of a hydrogen production cell. Therefore, the description of said is inappropriate. Also, said hydrogen production cell is unclear in which constitution in claim 1 is pointed at.